SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS B440 M2 (Intel Xeon E7-4870, 2.40 GHz)

$SPECint^®\_rate2006 =$ 1150

$SPECint\_rate\_base2006 =$ 1090
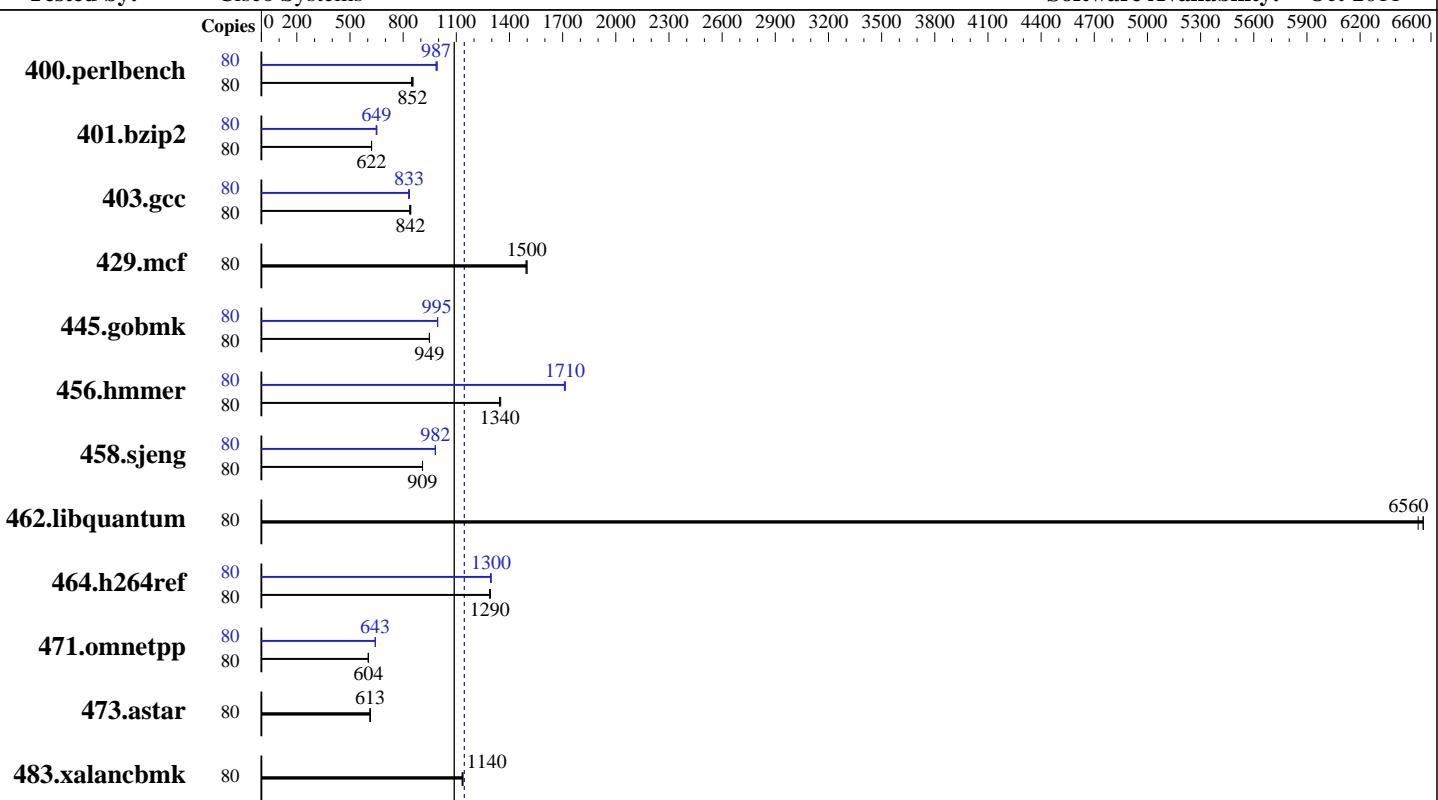
CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: Dec-2011
Hardware Availability: May-2011
Software Availability: Oct-2011

Benchmark	Copies	Peak	Base
400.perlbench	80	987	852
401.bzip2	80	649	622
403.gcc	80	833	842
429.mcf	80		1500
445.gobmk	80	995	949
456.hmmer	80	1710	1340
458.sjeng	80	982	909
462.libquantum	80		6560
464.h264ref	80	1300	1290
471.omnetpp	80	643	604
473.astar	80		613
483.xalancbmk	80		1140

SPECint_rate_base2006 = 1090
SPECint_rate2006 = 1150

Hardware

CPU Name: Intel Xeon E7-4870
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable: 1,2,3,4 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 4Rx4 PC3-8500R-9, ECC)
Disk Subsystem: 146 GB SAS, 15K RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.1 (Santiago)
2.6.32-131.0.15.el6.x86_64
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	**917**	**852**	913	856	923	847	80	788	992	**792**	**987**	792	987
401.bzip2	80	1243	621	1241	622	**1242**	**622**	80	1191	648	**1189**	**649**	1185	652
403.gcc	80	770	837	764	843	**765**	**842**	80	771	835	775	831	**773**	**833**
429.mcf	80	489	1490	**487**	**1500**	487	1500	80	489	1490	**487**	**1500**	487	1500
445.gobmk	80	**885**	**949**	886	947	884	949	80	844	995	845	994	**844**	**995**
456.hmmer	80	555	1340	**555**	**1340**	553	1350	80	**435**	**1710**	437	1710	435	1710
458.sjeng	80	1064	910	**1065**	**909**	1065	909	80	**986**	**982**	986	982	986	982
462.libquantum	80	**253**	**6560**	254	6530	253	6560	80	**253**	**6560**	254	6530	253	6560
464.h264ref	80	1370	1290	**1374**	**1290**	1375	1290	80	**1366**	**1300**	1366	1300	1369	1290
471.omnetpp	80	**828**	**604**	828	604	829	603	80	**778**	**643**	777	644	778	643
473.astar	80	916	613	**916**	**613**	914	615	80	916	613	**916**	**613**	914	615
483.xalancbmk	80	487	1130	**486**	**1140**	485	1140	80	487	1130	**486**	**1140**	485	1140

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

   The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

    Sysinfo program /opt/cpu2006/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on localhost.localdomain Thu Dec 8 18:08:51 2011

    This section contains SUT (System Under Test) info as seen by
    some common utilities. To remove or add to this section, see:
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E7- 4870 @ 2.40GHz
          4 "physical id"s (chips)
          80 "processors"
       cores, siblings (Caution: counting these is hw and system dependent. The
       following excerpts from /proc/cpuinfo might not be reliable. Use with
       caution.)
          cpu cores : 10
          siblings : 20

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Platform Notes (Continued)

```
     physical 0: cores 0 1 2 8 9 16 17 18 24 25
     physical 1: cores 0 1 2 8 9 16 17 18 24 25
     physical 2: cores 0 1 2 8 9 16 17 18 24 25
     physical 3: cores 0 1 2 8 9 16 17 18 24 25
   cache size : 30720 KB

 From /proc/meminfo
   MemTotal:       529231824 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

 /usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.1 (Santiago)

 From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
   Linux localhost.localdomain 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10
   15:42:40 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Dec 8 17:54

 SPEC is set to: /opt/cpu2006
   Filesystem     Type    Size  Used Avail Use% Mounted on
   /dev/sda1      ext4    134G   21G  107G  16% /

 Additional information from dmidecode:

 (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/opt/cpu2006/libs/32:/opt/cpu2006/libs/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1>        /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

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Base Compiler Invocation

C benchmarks:
    icc -m32

C++ benchmarks:
    icpc -m32

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/smartheap -lsmartheap

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32

    400.perlbench: icc -m64

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32

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Peak Portability Flags

       400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
          401.bzip2: -DSPEC_CPU_LP64
          456.hmmer: -DSPEC_CPU_LP64
          458.sjeng: -DSPEC_CPU_LP64
       462.libquantum: -DSPEC_CPU_LINUX
       483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

       400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                 -auto-ilp32

          401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                 -opt-prefetch -auto-ilp32 -ansi-alias

            403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

           429.mcf: basepeak = yes

          445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                 -ansi-alias -opt-mem-layout-trans=3

          456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

          458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                 -unroll4 -auto-ilp32

       462.libquantum: basepeak = yes

         464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                 -unroll2 -ansi-alias

C++ benchmarks:

         471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                 -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
                 -L/smartheap -lsmartheap

           473.astar: basepeak = yes

Continued on next page

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Peak Optimization Flags (Continued)

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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